IN THE CLAIMS:

Please amend claims 8 and 11 as follows:

1. (Previously Presented) A method of analyzing a hydraulic pump in real-time, the method comprising:

providing a pressure signal representing a discharge pressure of the hydraulic pump;

decomposing the pressure signal into a plurality of levels, each of the plurality of levels having at least one frequency band;

locating a feature pressure signal in at least one of the frequency bands;

comparing the located feature pressure signal to a reference wavelet.

2. (Original) The method of claim 1 wherein said comparing comprises:

determining a wavelet coefficient between the feature pressure signal and the reference wavelet.

3. (Original) The method of claim 1 wherein said comparing comprises:

performing wavelet transform on the feature pressure signal.

4. (Original) The method of claim 2 further comprising:

identifying a fault in the hydraulic pump if the wavelet coefficient exceeds a predetermined threshold, wherein the threshold comprises a wavelet coefficient representing an amount of difference between a feature pressure signal of a hydraulic pump not having the fault, and the reference wavelet.

5. (Original) The method of claim 1 wherein the reference wavelet is selected by:

providing a characteristic pressure signal representing discharge pressure of a hydraulic pump having a known condition;

decomposing the provided characteristic pressure signal into a plurality of levels, each of the levels having at least one frequency band;

determining the reference wavelet, wherein the reference wavelet is similar to a number of data points within at least one of the frequency bands.

6. (Original) The method of claim 5 wherein said determining the reference wavelet comprises:

identifying at least one candidate feature signal, each of the at least one candidate feature signals being for a range of data points within at least one of the frequency bands;

determining a difference between each of the at least one candidate feature signals and the reference wavelet;

identifying the reference wavelet having the smallest difference from one of the identified candidate feature signals.

7. (Original) The method of claim 2 further comprising:

at least one of scaling and shifting the located feature pressure signal before said step of determining a wavelet coefficient;

wherein said step of determining comprises determining a wavelet coefficient between the scaled and/or shifted feature pressure signal and the reference wavelet.

8. (Currently Amended) The method of claim 1 wherein the frequency band comprises a high-frequency band for ~~the~~ a decomposition level.

9. (Original) The method of claim 1 wherein said providing comprises receiving a direct discharge pressure from the pump.

10. (Original) The method of claim 1 wherein the discharge pressure comprises pulsation discharge pressure of the pump.

11. (Currently Amended) The method of claim 1 wherein the step of providing comprises:

providing a pressure sensor in fluid communication with a discharge port of athe hydraulic pump;

receiving pulsation discharge pressure from the hydraulic pump;

generating ~~the~~ an evaluating signal.

12. (Currently Amended) The method of claim 10 wherein the pump comprises an axial piston fixed displacement hydraulic pump.

13. (Original) The method of claim 11 wherein the pressure sensor is installed on the discharge port of the pump.

14. (Original) The method of claim 1 wherein the reference wavelet comprises at least one of a Harr wavelet, a Daubechies wavelet, and a Morlet wavelet.

15. (Original) The method of claim 1 wherein the pressure signal is sampled at discrete data points associated with discrete time steps.

16. (Original) The method of claim 1 wherein said step of decomposing comprises:

filtering the pressure signal using a low pass filter and a high pass filter.

17. (Original) An apparatus for identifying a defect in a hydraulic system comprising:

a pressure sensor in fluid communication with a discharge port of a hydraulic pump of the hydraulic system, the pressure sensor being configured to produce a pressure signal in response to a received pulsation discharge pressure;

a processor coupled to the pressure sensor, the processor being configured to:

receive the pressure signal;

decompose the pressure signal into a plurality of levels, each of the plurality of levels having at least one frequency band;

locate a feature pressure signal in at least one of the frequency bands;

compare the located feature pressure signal to a reference wavelet.

18. (Previously Presented) A hydraulic system comprising:

a hydraulic pump configured to distribute a fluid through at least one passage;

a pressure sensor in fluid communication with a discharge port of a hydraulic pump of the hydraulic system, the pressure sensor being configured to produce a pressure signal in response to a received pulsation discharge pressure;

a processor coupled to the pressure sensor, the processor being configured to:

receive the pressure signal;

decompose the pressure signal into a plurality of levels, each of the plurality of levels having at least one frequency band;

locate a feature pressure signal in at least one of the frequency bands;

compare the located feature pressure signal to a reference wavelet.

IN THE ABSTRACT:

Please amend the Abstract of the Disclosure as follows:

--A method and apparatus for analyzing a hydraulic pump in real-time. A pressure signal is provided representing a discharge pressure of the hydraulic pump, and the pressure signal is decomposed into a plurality of levels. Each of the plurality of levels has at least one frequency band. A feature pressure signal is located in at least one of the frequency bands and compared to a reference wavelet to determine if a fault exists in the hydraulic pump and/or athe type of defect in the hydraulic pump.--